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# **A Survey on Health Science Researchers: Their need and Information Seeking Behavior in Academic Context**

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## **Abstract**

E-resources are now commonly used for academic and research activities. The present health science researchers are interested for CAS and SDI services. This study is designed about to know the information sources, use habits of researchers and mostly the preference of online resources. The output result of this study indicates that the researchers up-date / up-grade themselves for learning habit with information development skill through e-library also.

**Key word:** Online database, Digital library, Internet, Open access journal, Google.

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## **Introduction:**

The outcome of one research satisfies the need of one segment whilst the other one satisfies different segments as per need. Health management is must for all, so Healthcare research satisfies the need of every individual of the society. The importance of Healthcare management can be envisaged as it emerged from the primitive time and gradually upgraded through continuous research works and combination of technologies in form of poison and therapeutics. So many discoveries/ inventions are the outcome of these researches in various fields. The general practitioners are determined to improve the quality of life which is directly related to the new research in their concerned field. Health science research focuses to generate new knowledge through new technique, research design and organizational interventions to serve the whole community.

Academic institutions are mostly involved in research activity to generate new knowledge where libraries are to support the aim and objectives of those institutions. The library professionals working in health science libraries are determined to provide effective services as per the users need. Libraries are now to repackage the form of information as per the user demand where specialized information is caused for exponential growth of knowledge. The need of information depends upon the user's moral and professional requirements.

This is worthy to mention that "Information could be defined in terms of tools, processes or knowledge" [1]. There is a tremendous change in information retrieval process. The professionals should have the knowledge to consider a variety of technical knowhow in order to guide the users properly. The users have a keen interest towards technologies and it is also important to maintain the speed, accuracy and reliability of these technologies. Health science students are more concerned about their academic study and fulfill their need through electronic resources. They prefer online more than off line [2]. There is a correlation between nation building and significance information. Nation can be strengthening with the development of the society where information sources and retrieval process are playing a vital role. The researchers from various disciplines need information and their approach towards library also varies in terms of capacity. The administrators seek valuable information while taking administrative decisions relating to outputs [3].

Some social and economic factors like: health, personal channels, current affairs and good living affect [4, 5, 6] and ICT application influence seeking of information [3, 7]. The seeking habits of mature students depend upon certain themes [8]. Library teaches the way of success and also well directed to provide information in sharing seeking the information need [9].

Better service can reach the end users by the expert library professionals through library resources [6]. Information seekers appreciate different trust areas of health information sources, because they belong to different age groups [10]. The suitable and useful information guides the way of success and the users generally gather their required information during their leisure time [5]. Library users assume to have their information need within the library settings [11]. The transfer of information literacy is not known to the health science students. The student nurses and the newly graduated nurses use print, electronic and interpersonal information resources [12]. The health science information seekers accept evidence based context and problem based learning which is a part of information need [13] and they prefer their friends and colleagues [14] as the most relevant sources to seek information, but print texts are more preferred than different database by the law students [15].

Information seeking behavior of the health science library user can not be gauged easily. But it is important for the authorities in academic and research organizations to measure it's effectiveness to finalize the funding in the budget system. The library users basically share experience and seek knowledge through informal sources but in the health sector, the information seekers use tablets and smart phones to share clinical information and quality health information [9, 16, 17, 18].

Information seekers exchange their ideas through information sources. The users get the relevant information from published or unpublished documents and semantic web. But the accuracy should be compared among those sources with the seeking attitude and confidence of users [19, 20]. Different organizations have their own budget system to procure library documents and it affects the procurement service and knowledge sharing and it directly impact on the information seeking behavior [16].

It is necessary to enhance knowledge for better achievement and the interested seekers need to gather relevant information [21] and health science libraries are suitable for this purpose in sustainable information resources. Bandura is a collection of four sources of self efficacy information system influence the users self efficacy belief [22]. Significantly monitoring the inquiry of task information from various sources and feedback information are responsible for information Seeking Behavior [23]. The researchers staying abroad may face a language barrier to seek information and it is difficult to assume the proportion of the users of the society or nation [24, 25]. Information seekers use internet as a primary source of information to reach at relevant information in this electronic age [12, 17, 20, 24]. The approaches of information seekers from health science field facilitate them to revisit the information sources [25]. Library users can request the information literacy instructor to help them seeking

information. It will be effective and information seeking behavior of the users grows searching experience [8]. There is a demand from the information seekers to subscribe more electronic resources and it causes to reduce the subscription of print journals [26, 27, 28] and reprographic service with document delivery service is also reduced [29,30].

### **Objective of the Survey:**

This survey is designed to

- know about the useful library resources of the health science researchers
- know about the information need of the health science researchers
- find the level of satisfaction for researchers from the identified sources
- find how researchers rate the general availability and access the library services

### **Methodology used:**

This study is under gone on a sample survey. There were 210 samples distributed among the health science researchers of SIKSHA ‘O’ ANUSANDHAN University for their response. Only 180 (85.71 %) of the distributed samples (Table 1) returned with complete information and the tables are prepared using MS-Excel and SPSS 20. There are many researchers, including faculties (Assistant Professor, Associate Professor and Professor) with Post Graduate students and Ph. D scholars.

### **About Siksha ‘O’ Anusandhan (SOA) University:**

SIKSHA ‘O’ ANUSANDHAN University is a deemed to be university located at temple city, Bhubaneswar, Odisha, India. The foundation stone was laid as Institute of Technical Education and Research in the year 1997. The university teaching department has several institute such as Pharmacy, Medical, Dental, Nursing, Hotel Management, Management, Agriculture, Biotechnology, Engineering and Law. Earlier all the department was established in a group and was known as ITER and then the group was came under a University structure since 2007. The University has an open admission process and every year entrance exam was conducted through its National level test ‘SAAT’ and similarly through other national level tests like AIEEE, AIPMT, CAT, XAT, NEET, MAT, CLAT etc. The University’s academic offerings UG, PG and PhD programmes in various stream. As per as research prospective concerned the university has full flashed research activity since 2007 which is a great matter of concerned towards research skills. The Ph.D. regulations have been framed as per regulations IITs followed by UGC circulation. Since the time now university has number n numbers of full time research scholar in various departments at UTD level. It is one of the institutes which is eligible for Center’s research collaboration scheme in Odisha.

The University is committed to provide high standard and quality of education systems like other institutes/Universities of the country. The university has set several bench-marks with other top class institutions and also new teaching and research methods for academic governance. The University aims to provide novel education and also wants to establish as one of the preferred institution among other institutions/University of the country.

### **Result and Discussion:**

Table 1 - Response of the health science Researcher

Category	Sample Distributed	Sample collected	Percentage
Faculties	90	69	76.66
Research Scholars	120	111	92.5
<b>Total</b>	<b>210</b>	<b>180</b>	<b>85.71</b>

There is a good response of the survey. Overall 85.71% questionnaire were returned with complete information for this study, where 76.66% is from faculty and 92.5% from research scholars.

### **Information Seeking Behavior:**

Seeking of information is a basic need of the researchers in every field. The attitude of the library users varies from discipline to discipline. We feel a positive attitude of the researchers towards library. It is also noticed that the researchers are agree to have knowledge for their research development. They are interested for current development and use the library resources to enhance their knowledge. This survey result indicates that 58.33% researchers visit library daily. Approximately 2% visit library monthly and 13.89% researchers visit library weekly. Over all 25.56 % use library if they need some requirements (Table 2).

Table 2 - Researchers visit to Institute Library

	Frequency	Percentage
Daily	105	58.33
Weekly	25	13.89
Monthly	4	2.22
When Need Arises	46	25.56
<b>Total</b>	<b>180</b>	<b>100.00</b>

Asking for the purpose of seeking information, it is found that most of the researchers are interested to enhance academic knowledge, writing articles, preparing project thesis, develop their research work and conference presentation respectively (Table 3).

Table 3 - Purpose of Seeking Information

	Frequency	Percentage
Research Work	85	47.22
Conference presentation	13	7.22
Writing articles	118	65.56
Enhance knowledge	130	72.22
Project thesis	96	53.33

There is a good collection of books (both text and reference) in the libraries of the concerned institutions and also subscription of both national and international journals to strengthen the collection development policy. The library users also avail the subscription facility of different databases, e-book and e-journals with internet facilities. The researchers mostly use the subscribed journals, internet sources and e-resources subscribed by the university. The other tools like textbook and reference books are less used for their research activity (Table 4). Most of the researchers are familiar with the advanced technology and use electronic devices inside library to collect information. The users (47.22 %) collect their information from internet sources. 72.22 % researchers collect information from the institute library and 7.22% are in direct contact with the librarian and 6.67 % researchers collect their information through E-mail (Table 5). The survey result indicates that the researchers are more dependants on reference books and internet to fulfill their information need. 26.11% researchers seek information from their colleagues and friends. Few researchers depend upon the other libraries to meet their need and 42.78% researchers use research reports of various disciplines (Table 6).

Table 4 - regularly used Information tools in library

Information Tools	Frequency	Percentage
Textbook	13	7.22
Journals	114	63.33
Reference books	26	14.44
E-resources	56	31.11

Internet sources	76	42.22
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Table 5 - Mode of Information Collection

Information Collection Mode	Frequency	Percentage
Institute library	130	72.22
Telephone to Librarian	13	7.22
e-mail to librarian	12	6.67
Internet resources	85	47.22

Table 6 - Source to find required Information

Information Sources	Frequency	Percentage
Colleague/friends	47	26.11
Reference books	106	58.89
Journal articles	22	12.22
Research report	77	42.78
Librarian	27	15
Other libraries	10	5.56
Internet	109	60.56

Some barriers are always there in every activity. It also happens on the health science researchers. The survey found that 58.33% researchers agree on lack of time. Only 16% want to develop their searching skill. 15% of them are dissatisfied with the availability of needed material. This study satisfies that well trained library professionals are available in each library (Table 7).

Table 7 - Barriers for seeking information

	Frequency	Percentage
Lack of time	105	58.33
Lack of searching skill	29	16.11
Unavailability of needed materials	27	15.00



Lack of knowledge	26	14.44
Unavailability of trained library staff	1	0.56
Lack of subject knowledge among library staff	11	6.11

### Information Sources:

There are so many information sources available in this modern electronic world. But the users have the preference to collect their required information by their choice and need. This survey reveals that Magazine, scientific journals and reference materials are mostly used by the health science researchers with 71.11%, 68.33% and 57.78% respectively. Monographs and standards/specification are less preferred print sources (Table 8).

Table 8 - Preference for print source of information

Print Sources	Frequency	Percentage
Books	25	13.89
Monographs	11	6.11
Scientific journals	123	68.33
Magazine	128	71.11
Reference material	104	57.78
Patents	59	32.78
Research reports	19	10.56
Thesis / Dissertation	13	7.22
Standards / Specifications	8	4.22
Conference / Seminar volumes	21	11.67

There are a good collection of e-resources including e-books, e-journals and some other databases for the health science researchers to achieve better research activity and academic need. The survey found that 51.11% are satisfied with e-books collection and 37.78% researchers agree with e-journals where 33.89% opined that there is a good collection of online databases (Table 9). 51.11% researchers prefer Open Access as important electronic information source and 40.56% are more interested on e-books collection. E-journal is being preferred by the 13.33% researchers, 7.78% researchers have interest on databases and

Information gateway (Table 10). Most of the researchers (63.89%) are interested to attend the orientation program on using e-journals and 18.89% have knowledge on using e-journals where 17.22 % are neutral on need of training (Table 11).

Table 9 - Availability of E-Resources

	Frequency	Percentage
E-books	92	51.11
E-journal	68	37.78
Online database	61	33.89

Table 10 - Preference of electronic information sources

	Frequency	Percentage
E-journal	24	13.33
E-book	73	40.56
E-database	14	7.78
Information gateway	14	7.78
Open Access	92	51.11

Table 11 - Need of Training on E-journal

	Frequency	Percentage
Yes	115	63.89
No	34	18.89
Neutral	31	17.22

### Use Habits and Library Services:

Libraries and the library professionals are determined to serve better to the users. The researchers are also habituated with the library services and seek information for academic purpose, research activity and enhance their personal knowledge. They need information daily, weekly, monthly or when they require through books, journal article and e-resources. Some of them also visit library for entertainment, to spend leisure time and housekeeping operation of library. Health science researchers of this university utilize the library services individually, like: cataloguing, indexing / abstracting, reprographic, bibliographic and E-mail / SMS service. It is a good sign of the library to provide its services to the users regarding

utilization of library resources and the atmosphere will be healthy on providing the right information to the right people in right time. This survey found that 60.56% researchers appreciate Current Awareness Service (CAS) / Selective Dissemination of Information (SDI) and 52.78% prefers reference service of the library. 35% researchers satisfied with circulation source and 34.44% researchers appreciate the electronic database services by the library professionals (Table 12, 13, 14 and 15).

Table 12 - Frequency of Library Use

Library Usage	Frequency	Percentage
Daily	121	67.22
Weekly	28	15.56
Quarterly	1	0.56
Monthly	4	2.22
Need arises	26	14.44
Total	180	100

Table 13 - Purpose of Visiting Library

Purpose	Frequency	Percentage
Academic study	42	23.33
Research study	118	65.56
Find books	66	36.67
Journal articles	15	8.33
Search e-resources	118	65.56
Entertainment	19	10.56
Spend leisure time	16	8.89
For circulation	30	16.67

Table 14 - Available Library services in Institute Library

	Frequency	Percentage
Cataloguing	29	16.11
Indexing / Abstracting	24	13.33

Bibliographic	41	22.78
Reprographic	28	15.56
E-MAIL, SMS	58	32.22

Table 15 - Preference of Library services

Services	Frequency	Percentage
Circulation source	63	35
Reference service	95	52.78
Bibliographic service	12	6.67
Abstracting / Indexing	15	8.33
CAS / SDI	109	60.56
E-document delivery service	31	17.22
E-resources	62	34.44
E-databases	23	12.78
OPAC search	12	6.67

62.22% researchers use internet for their current development. Internet is most useful source and it aware them to browse online journals with personal communication. 25.56% opined that they attend conference for current development and 20.56% researchers depend upon E-mail alert. 18.89% are interested to browse current journal and very few are interested in publisher's CAS / SDI (Table 16).

Table 16 - Awareness of Current Development

	Frequency	Percentage
Browsing current journal	34	18.89
Browsing online journals	26	14.44
Attending conference	46	25.56
Internet searching	112	62.22
E-mail alert	37	20.56
Publisher CAS / SDI	4	2.22
Personal Communication	42	23.33

### Usage of E-Resources:

The health science researchers of this university mostly use internet to access subscribed electronic resources. It reveals that 79.44% of the researchers depend on internet and 30% prefer e-books as valuable e-resources. It is also interesting that 10.56% prefer E-journals and 13.33% prefer online database (Table 17).

Table 17 - Preferences of E-Resources

	Frequency	Percentage
Internet	143	79.44
Online database	24	13.33
E-books	54	30
E-journal	19	10.56

The academic / research organizations prepare bibliographic database for future use. It is useful in curriculum development and academic requirement. The health science researchers mainly use SCOPUS, WEB of SCIENCE, MEDLINE and PUBMED database. But survey result identifies that researchers prefer MEDLINE more than the other database collected by the university and Chemical abstract is in the last place of the preference table with 3.89% (Table - 18). The researchers also respond on so many barriers they face in using e-resources. They were asked about six probable barriers. Most of them comment on time consuming. This survey identifies that there are 27.22% researchers are worried on time consuming, 25.56% are dissatisfied with number of nodes available in e-library and 12.78% are not getting the required full text (Table 19).

Table 18 - Preferences of Bibliographic Database

	Frequency	Percentage
Chemical abstract	7	3.89
BIOSIS	8	4.44
Web of Science	65	36.11
Medline	67	37.22
INSPEC	8	4.44
Scopus	34	18.89
Pubmed	19	10.56

Table 19 - Barriers to use E-resources

	Frequency	Percentage
More information retrieved	32	17.78
Time consuming	49	27.22
Lack of computer knowledge	15	8.33
Limited computer facility	46	25.56
Limited E-resources	25	13.89
Non existence of full text	23	12.78

Information retrieval system varies from user to user. They browse book shelves directly in open access system. The users access library home page and e-journals through consortia to seek information. The internet facility and e-library system allows them to obtain information through open access resources, discussion and special alert from library. The professionals working in library are dedicated to provide authentic information to the users, who contact them directly. The survey result shows that library home page is used less among all facilities. Open access resources are used more and followed by open library system, professional demand and discussion respectively (Table 20). The nature of practice online information is a process to discover new ideas among the researchers. This survey indicates that 48.89% researchers seek online information daily followed by 23.33%. Very few researchers use rarely and 18.33% use some time in a month (Table 21).

Table 20 - Ways to obtain required information

	Frequency	Percentage
Browsing library shelves	76	42.22
Accessing library home page	7	3.89
Accessing e-journal through consortia	17	9.44
Through open access resources	86	47.78
Special alerting from library	15	8.33
Through discussion	36	20
Asking librarian	49	27.22

Table 21 - Use of Online Information

	Frequency	Percentage
Daily	88	48.89
Weekly	42	23.33
Some time in month	33	18.33
Occasionally	14	7.78
Rarely	3	1.67

There are so many reasons to use e-resources. The researchers are well determined to access e-resources for their curriculum development and research activity. Most of them are agreed for all the probable causes, but only 9.44% researchers respond for the first question (Table 22). Research is going on day by day. The researchers provide new knowledge to the society in forms of Journal articles. The new researchers can get the prior knowledge to develop new idea by full text articles through print copy and browsing e-journals. Approximately 24.44% researchers collect full text journal articles from online resource subscribed by this university and 17.22% get their information through concerned librarians and directly from authors. It is also found from this survey that 31.11% took print copy of the journal articles and 14.44% researchers collect the full text from friends (Table 23).

Table 22 - Probable causes for preferring E-resources

	Frequency	Percentage
Remote access	17	9.44
Easy to search using keywords	30	16.67
Easy to save, copy, edit the document	34	18.89
Time shaving	38	21.11
All the above	81	45

Table 23 - Process to get full text journal article

	Frequency	Percentage
Print copy	56	31.11
E-journal	44	24.44
Directly from author	31	17.22

PDF file from publisher	5	2.78
Friends	26	14.44
Librarian	31	17.22

Web resources are now more used in this digital age. Information seekers visit different websites, databases, and social network sites for their required information. They also use E-mail to keep them in contact. This survey found that 63.33% researchers visit websites and 34.44% respondents use social networks to strengthen their research. Different consortium and database are more useful for research activity such as: INFLIBNET / INDEST, Science direct, Scopus, PubMed etc. But only 6.11% use different consortium and 7.22% use databases for their purpose. Present survey indicates that 25% respondents eagerly access the e-mail and SMS alert service (Table 24). When there is action, always there is some reaction. The library users face some barriers during browsing of web resources. The common barriers occurred sometime to access e-resources in the library. This survey found that slow speed of internet occurs on 52.22% health science researchers where only 7.78% researchers agree with the risk of digital preservation. Huge amount of data retrieved is accepted by 26.67% researchers and 20% researchers comment on lack of authenticity. The problem like technical fault and long time work in front of computer are accepted by 16.11% and 18.89% respectively by the researchers (Table 25).

Table 24 - Usage of web-resources

	Frequency	Percentage
Websites	114	63.33
Database	13	7.22
INFLIBNET/INDEST Consortium	11	6.11
Social Network	62	34.44
E-mails & SMS alert	45	25

Table 25 - Barriers to use web resources

	Frequency	Percentage
Technical fault	29	16.11
Slow speed of internet	94	52.22
Huge amount of data	48	26.67



Long time work	34	18.89
Risk of digital preservation	14	7.78
Lack of authenticity	36	20

It is remarkable to spend some time in the library. The health science researchers of this university also visit library and more than 50% spend almost an hour in library while coming to retrieve information. Other 50% (approximately) spend few minutes or few hours in library for their purpose (Table 26). E-library facility of this university is accepted by 57.22% researchers in health science field. Only 10% are dissatisfied and 32.78% researchers are silent in this response (Table 27). The level of satisfaction is satisfied among the researchers while 10% researchers fulfill their 100 % required information and followed by 37.78%, 25.56% and 18.33% respectively as to reach the required information. But only 3.33% researchers are dissatisfied with the facility provided by this university (Table 28).

Table 26 - Time spend daily to retrieve information

	Frequency	Percentage
Few minutes	41	22.78
Almost an hour	94	52.22
Few hours	45	25.00
TOTAL	180	100.00

Table 27 - Satisfaction in using E-Library

	Frequency	Percentage
Yes	103	57.22
To some extent	59	32.78
No	18	10.00
Total	180	100.00

Table 28 - Fulfillment of required information

	Frequency	Percentage
Below 10%	6	3.33
10%-30%	33	18.33
50%	46	25.56

50%-80%	68	37.78
Almost 100%	17	9.44

General search engines are useful to access open access journals. Among all the existing search engines, Google is most popular to browse freely available information in internet. Apart from Google, the researchers use Yahoo search engine but MSN and Alta Vista is used rarely to meet their information need (Table 29). The University facilitates the Wi-Fi system for the users. The health science researchers browse the subscribed e-resources anywhere in the premises. 47.22% researchers access e-library, 28.89% researchers make themselves familiar with the general search engines. 11.67% respondents fulfill information need through open access journals and 9.44% meet their requirement from publisher's website (Table 30). It is found from this survey that 45.56% researchers are in touch with open access journals and 42.78% are not in touch with those materials where 11.67% researchers are remain silent (Table 31).

Table 29 - Practice of major search engines

	Frequency	Percentage
Google	170	94.44
Yahoo	19	10.56
MSN	1	0.56
AltaVista	2	1.11

Table 30 - Searching of E-Journal articles

	Frequency	Percentage
E-library	85	47.22
Library website	10	5.56
Institutional Repositories	8	4.44
Open access journals	21	11.67
Publisher's website	17	9.44
General search engine	52	28.89

Table 31 - Opinion on using Open Access Journals

	Frequency	Percentage
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Yes	82	45.56
No	77	42.78
Neutral	21	11.67

The result of this survey indicates that 70.56% researchers are interested to publish their research papers in open access journals where 18.89% are not interested for those journals and 10.56% does not have any opinion regarding this (Table 32). Again, 42.78% researchers are interested for institutional archives and 33.89% are not interested for the preservation. Finally 23.33 % does not have any opinion on institutional archive (Table 33).

Table 32 - Opinion on publication in Open Access Journals

	Frequency	Percentage
Yes	127	70.56
No	34	18.89
Neutral	19	10.56

Table 33 - Interest on Institution Archive

	Frequency	Percentage
Yes	77	42.78
No	61	33.89
Neutral	42	23.33

### Outlook:

After receiving the valuable opinion from the health science researchers of the University, it is found that most of the researchers from health care sector visit library regularly. They also spent their valuable time there to up-date their research activity. All are familiar with internet and aware of e-resources. The e-resource management and retrieval process is up to the satisfaction level of the health science researchers. It is noticed that the use of e-resources is higher than the other process like: print resource and other format of resource. The important thing is that, after using all the library facilities, the researchers are not interested to preserve their documents in institutional archive. Some of them are also neutral in receiving some library help for their personal or information need. It is not worthy to suggest the improvement of techniques in library system and some retrieval process to attract more users

towards library and finally it is suggested that more study is required to find a better result on this topic.

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